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Mineral Industry Surveys

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VANADIUM IN OCTOBER 2005

Reported domestic consumption of vanadium in October 2005 was about 3% more than that of the previous month and was about 8% less than that of October 2004, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 398 metric tons (t) at the beginning of 2005 and 329 t at the end of October.

According to Ryan's Notes (2005c), U.S. ferrovanadium (FeV) prices ranged from $25.875 to $26.813 per pound of vanadium content in October, as compared with $21.000 to $22.000 in September. European FeV prices ranged from $59.875 to $62.875 per kilogram (kg) in October, as compared with $54.556 to $58.222 in September. Vanadium pentoxide (V_2O_5) prices ranged from $12.438 to $13.438 per pound in October as compared with $10.556 to $11.556 in September.

Japan's JFE Material Co., Ltd. (JFE), in a joint venture with Mitsubishi Corporation and Kashina Kyodo Power, announced plans to begin production of 2,000 metric tons per year (t/yr) of FeV and 2,000 t/yr of ferromolybdenum/nickel in January 2006. Mitsubishi and Kashina Kyodo Power will supply vanadium-bearing, spent desulfurization catalysts and boiler residues to the joint venture, Metal Technology, and the FeV and FeMo products will be sold to JFE Steel Corporation and other affiliated specialty steel plants. JFE estimated that about 140,000 t/yr of these vanadium-bearing wastes were available in Japan and expected to process about 40,000 t/yr in the new plant (Ryan's Notes, 2005a).

Strategic Minerals Corporation, Danbury, CT, announced plans to consolidate its vanadium chemicals production operations at a new vanadium-halide facility under construction at its Hot Springs, AR, facility. The new facility, expected to be ready by early 2006, would replace an existing facility at Niagara Falls, NY. The consolidation was expected to streamline chemical operations, as the Hot Springs facility already supplied the V_2O_5 feedstock for the Niagara Falls facility. The vanadium-halides (vanadium oxytrichloride, vanadium tetrachloride, and vanadium-titanium mixes) are used to make catalysts for the production of polyethylene, synthetic rubber, and other chemicals (Ryan's Notes, 2005b).

References Cited

Ryan's Notes, 2005a, JFE to produce FeV and FeMo from waste: Ryan's Notes, v. 11, no. 41, October 10, p. 1.
Ryan's Notes, 2005b, Strategic Minerals will consolidate its vanadium chemicals: Ryan's Notes, v. 11, no. 43, October 24, p. 4.
Ryan's Notes, 2005c, [untitled]: Ryan's Notes, v. 11, no. 45, November 7, p. 10.

TABLE 1

U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM[1]

(Kilograms, contained vanadium)

	2004		2005			
			September		October	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovanadium[2]	3,610,000	298,000	267,000	295,000	283,000	306,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other[3]	449,000	101,000	29,000	27,500	22,800	23,300
Total	4,050,000	398,000	296,000	323,000	305,000	329,000

W Withheld to avoid disclosing company proprietary data; included with "Other."

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

[3]Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol W.

TABLE 2

U.S. CONSUMPTION OF VANADIUM, BY END USE[1]

(Kilograms, contained vanadium)

		2005		
	2004	September	October	Year to date
Steel:				
Carbon	1,300,000	62,500	68,900	734,000
High-strength low-alloy	1,160,000	86,300	99,000	903,000
Stainless and heat-resisting	60,000	5,080	5,080	49,800
Full alloy	1,060,000	80,900	81,700	846,000
Tool	239,000	31,500	27,500	356,000
Total steel	3,820,000	266,000	282,000	2,890,000
Superalloys	16,600	803	821	8,200
Miscellaneous and unspecified[2]	215,000	28,500	22,400	567,000
Total consumption	4,050,000	296,000	305,000	3,470,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes cast irons, alloys excluding steel and superalloys, chemical and ceramic uses, and other miscellaneous and unspecified uses.

TABLE 3
U.S. IMPORTS AND EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY AND VANADIUM METAL, INCLUDING WASTE AND SCRAP[1]

(Kilograms, gross weight)

	Aluminum-vanadium master alloy		Vanadium metal, including waste and scrap	
	Quantity	Value	Quantity	Value
Imports for consumption:				
2004	19,100	$66,700	31,200	$1,710,000
2005:				
July	--	--	379	3,120
August	--	--	899 r	171,000 r
September, Germany	--	--	10,700	631,000
Total	--	--	10,700	631,000
Year to date[2]	1	3,770	38,900	2,380,000
Exports:				
2004	10,900,000	24,000,000	522,000	7,760,000
2005:				
July	1,170,000	2,890,000	51,800	4,250,000
August	1,640,000 r	5,260,000 r	8,960 r	464,000 r
September:				
Austria	--	--	3,710	93,600
Brazil	923	18,700	--	--
Canada	336,000	1,110,000	180	5,090
Germany	--	--	1,720	153,000
Guatemala	1,080	11,800	--	--
Japan	50,700	649,000	--	--
Korea, Republic of	2,100	13,100	--	--
Malaysia	916	11,900	--	--
Mexico	422,000	867,000	--	--
Thailand	55,700	262,000	--	--
Taiwan	10,900	50,900	--	--
United Kingdom	--	--	18,600	1,510,000
Total	880,000	2,990,000	24,200	1,760,000
Year to date	9,220,000	28,100,000	228,000	13,400,000

rRevised. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revisions to previous months' data.

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND OTHER OXIDES AND HYDROXIDES OF VANADIUM[1]

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride)[2]		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
Imports for consumption:						
2004	3,020,000	$62,100,000	1,040,000	$8,600,000	120,000	$1,650,000
2005:						
July	167,000	13,400,000	96,800	6,020,000	20,500	949,000
August	110,000 r	6,740,000 r	225,000 r	7,760,000 r	24,300 r	107,000 r
September:						
Austria	--	--	4,130	118,000	--	--
Canada	31,500	2,720,000	--	--	--	--
China	--	--	9,490	383,000	--	--
Czech Republic	114,000	5,790,000	--	--	--	--
Germany	--	--	90	4,970	--	--
Japan	1,500	93,200	--	--	--	--
Russia	--	--	6,580	198,000	--	--
South Africa	--	--	102,000	3,320,000	30,400	251,000
Total	147,000	8,610,000	122,000	4,030,000	30,400	251,000
Year to date[3]	11,500,000	106,000,000	953,000	38,500,000	123,000	4,160,000
Exports:						
2004	267,000	8,770,000	240,000	2,090,000	584,000	4,140,000
2005:						
July	58,000	2,860,000	2,310	33,300	15,300	149,000
August	18,100 r	1,010,000 r	43,200 r	862,000 r	43,400 r	1,330,000 r
September:						
Canada	13,700	283,000	--	--	141,000	1,250,000
Germany	--	--	3,910	166,000	--	--
Netherlands	25,200	976,000	--	--	9,250	143,000
United Kingdom	--	--	--	--	4,160	37,000
Total	38,900	1,260,000	3,910	166,000	154,000	1,430,000
Year to date	366,000	14,500,000	174,000	3,570,000	615,000	12,200,000

rRevised. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]May include catalysts containing vanadium pentoxide.
[3]May include revisions to previous months' data.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG[1]

(Kilograms, contained vanadium pentoxide)

	Ash and residues		Ash and residues (not from the manufacture of iron and steel)		Slag, from the manufacture of iron and steel	
	Quantity	Value	Quantity	Value	Quantity	Value
2004	4,260,000	$8,520,000	11,100,000	$2,000,000	244,000,000	$10,400,000
2005:						
July	107,000	275,000	767,000	119,000	114,000,000	1,380,000
August	460,000 r	1,180,000 r	523,000 r	92,300 r	35,500,000 r	1,590,000 r
September:						
Canada	--	--	433,000	58,900	46,300,000	579,000
China	--	--	--	--	1,620,000	339,000
Mexico	400,000	999,000	--	--	--	--
Total	400,000	999,000	433,000	58,900	48,000,000	918,000
Year to date[2]	3,260,000	7,190,000	5,240,000	842,000	386,000,000	8,270,000

rRevised. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]May include revisions to previous months' data.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS[1]

(Kilograms, contained vanadium)

	Sulfates		Vanadates	
	Quantity	Value	Quantity	Value
2004	500	$19,100	74,700	$1,150,000
2005:				
July	--	--	17,100	551,000
August	--	--	12,800 r	622,000 r
September	--	--	--	--
Year to date[2]	--	--	67,500	2,150,000

rRevised. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]May include revisions to previous months' data.

Source: U.S. Census Bureau.